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(54) MULTI SET TOP BOX

Abstract

Machine Translation | Human Translation

The present invention relates to the multi set top box, and outputted an plurality of broadcast datas is decoded from the demodulation method: demodulation method demodulating and outputs the broadcasting program of the selected multi-channel and it is signal-connected with a plurality of display devices through the decoding means: a plurality of output ports restoring and outputs to the original video and audio data. It is comprised from a plurality of external remote control signal receiving meanses which is corresponded with one to one and transmits each broadcast data restored and outputted as described above to the signal-connected corresponding display device through the output port is equipped according to the transmitted remocon signal including the control means controlling an operation including the demodulation method etc. A plurality of televisions signal-connected in the multi set top box (settop box) and the Remocon signal receiver corresponded with one to one are equipped in each television Ga Kkal. It is the very convenient invention which quite freely selects the broadcast channel which is not restricted by the place where the settop box is installed to a user and desires in the place where the television is installed and watched.

Machine Translation | Human Translation

PURPOSE: A multi STB(Set Top Box) is provided to freely select a broadcasting channel at a place where a televisions is installed, regardless of a place where a STB is installed.

CONSTITUTION: A plurality of tuners(10) demodulate broadcasting programs of a plurality of selected channels. A plurality of demultiplexers(20) selectively output a random single program among the broadcasting programs output from the plurality of tuners. A plurality of decoders(30) decode broadcasting data output from the plurality of demultiplexers for restoring the broadcasting data into original video and audio data. A plurality of digital-to-analog converters(40) convert the decoded digital broadcasting data into analog broadcasting signals. A connector(50) includes a plurality of output ports for one-to-one signal connection with a plurality of televisions. A collector(70) receives signals inputted from remote control signal receiving units, and encodes the received signals and information related to the corresponding input port. A controller(60) decodes encoding information inputted from the collector for appropriately controlling the corresponding component.

Representative Drawing(s)

Fig. 3

Keyword(s)

The settop box, collector, remocon signal, television, tuner.

Descritption

Brief explanation of the drawing

2 For example,
Fig. 1 shows the general form in which a plurality of televisions (TV) is signal-connected in the settop box of one part.

3 For example,
Fig. 2 shows the form in which a plurality of televisions is signal-connected in the multi set top box.

4 Fig. 3 shows the configuration of the desirable embodiment of the multi set top box.

5 I. The description of reference numerals of the main elements in drawings.

6 10: tuner (Tuner) 20:demultiplexer(De-Mux)

7 30: decoder (Decoder) 40:d/A converter(DAC)

8 50: connector (Connector) 60:controller(Controller)

9 70:collector(Collector)

10 100:multi set top box(Multi Set Top Box)

11 200, 210, 220:television(TV)

12 201, 211, 221:remocon signal receiver(IR Receiver)

- Details of the Invention
- Purpose of the Invention

The Technical Field to which the Invention Belongs and the Prior Art in that Filed

13 The present invention relates to the multi set top box, more particularly, to the multi set top box which quite freely watches the broadcast of the desired channel through the television (TV) signal-connected with the digital broadcast receiver in spite of not flowing into the place where the digital broadcast receiver is installed. And a normalizing and commercialization about the digital television broadcasting rapidly develop according to the power generation of the digital technology including the digital video compression and digital side / demodulation etc. in these days. And the digital broadcast receiver like the settop box (STB : Set Top Box) receiving this kind of the digital television broadcasting uses the broadcasting program which a user chooses the equipped decoder within a receiver. After restoring to the original audio and video data, it transmits and prints out to A / V output device like the general television (TV) and the broadcasting program selected out for a user is watched.

15 Moreover, in these days, the most of assumptions, the television of the different part is installed (the television is installed in the inner room, the living room, the studying room etc. for example). In case of connecting the television of the different part to the settop box of one part, the television has the advantage of watching the satellite broadcasting, the cable broadcasting, the digital broadcast-terrestrial etc. through each television.

16 Fig. 1 is the form in which the digital broadcast receiver of one part is connected to the home network and supporting a plurality of televisions. Here the home network means IEEE-1394, HAVi, jini, HPNA, UPnP, wireless LAN, bluetooth etc. At this time, as to each television, it delivers the information about that to the settop box after the remocon signal being input. The settop box controls the video signal transmitted to each television, and the reception of data broadcasting and speech signal according to two signal. And the subject which here the remocon signal is input can be the television itself. The settop box downloads the application software (Application S/W) which is appropriate according to the platform of each television and this application software can process an input and it can communicate with the settop box.

17 But in this way, it had the troublesome problem it moved to the living room where in front the settop box was set in case each television installed at the living room, the inner room, and the studying room the settop box is installed in that is, the living room the television of the different part is connected to the settop box of one part and it uses tried to change the watching TV halfway channel with the installed settop box as described above within the constant distance designated on the settop box a channel etc. are changed through the remote controller of the settop box in case of being connected through the television installed at a user is the inner room as to a this, the Remocon signal receiver (IR Receiver) receiving the remocon signal is equipped within the settop box it has to be positioned and of to changing a channel through the remote controller etc.

18 Moreover, there can be the inconvenient problem of quite freely watching the desired broadcast channel through each television it uses it connects the television of the different part to the settop box of one part the decoder etc. are not fully equipped plural number for restoring and outputting as the tuner, which selects the broadcasting program of the special channel in the settop box up to date and demodulated and outputs the original video and audio data broadcast data are decoded.

Technical challenges of the Invention

19 Therefore, it is an object of the present invention to provide the multi set top box which to solve problems described in the above, is created, and it quite freely selects the broadcast channel desiring in the digital broadcast receiver through the signal-connected television without the limit of the broadcast channel in spite of not moving to the installed multi set top box neighborhood and watched.

▸ **Structure & Operation of the Invention**

20 There can be the feature it is signal-connected with a plurality of display devices through the decoding means: a plurality of output ports restoring and outputs as the demodulation method: original video which the multi set top box according to the present invention for achieving the above described object demodulates and outputs the broadcasting program of the selected multi-channel and audio data outputted an plurality of broadcast datas is decoded from the demodulation method.

21 Referring to the figure it circumstantially illustrates for below, and the preferred embodiment about the multi set top box.

22 For example,
Fig. 2 shows the form in which the television (TV) of the different part is connected to the multi set top box (Multi Set Top Box) (100). As shown in
Fig. 2, in each television (200, 210, 220, .) Ga Kkal connected to the multi set top box (100), signal-connected a plurality of remocon signal receiver (IR Receiver) (201, 211, 221, .) is equipped in the multi set top box (100). It makes the bearer channel modification etc. free through the remote controller from the current position although a user does not move the television viewing halfway column.

23 Fig. 3 shows the configuration of the desirable embodiment of the multi set top box (100). It is comprised of the connector (Connector) (50), the collector (Collector) (70), and the controller (Controller) (60) decoding the encoding information inputted from the collector (70) and appropriately controls the target organization element equipped with the connector (Connector) (50), the collector (Collector) (70), and the controller (Controller) (60) decoding the encoding information inputted from the collector (70) and appropriately controls the target organization element. A plurality of decoders (Decoder1, Decoder2, Decoder3, .) (30) decoding broadcast data are selectively outputted from the demultiplexer (20) and restores and outputs to the original video and audio data. The collector (Collector) (70) receives the signal inputted through equipped an plurality of input ports ((1), (2), and (3)) from the extension each Remocon signal receiver (201, 211, 221, .), and encoding the information for the target input port and the received signal and outputted.

24 In this way, equipped an plurality of remocon signal receivers (201, 211, 221, .) are corresponded with one to one. Therefore, it is the output port of the connector (50), which as described above, is signal-connected with one to one moreover, a plurality of. And moreover, the input port of the collector (70) is a plurality of. Therefore, as to the controller (60), the remocon signal inputted through the input port (1) of the collector (70) the remocon signal inputted from the Remocon signal receiver 1 (201) through the input port (2) the remocon signal inputted from the Remocon signal receiver 2 (211) through and, the input port (3) regards as the signal inputted from the Remocon signal receiver 3 (221).

25 As shown in
Fig. 3, in the multi set top box (100), the tuner (10), demultiplexer (20), decoder (30), the D/A converter (40) etc is fully equipped plural number. A user connects a plurality of televisions as the number of the equipped tuner (10) as described above to the multi set top box (100) and it can use a user. And the broadcasting program of the desired channel is watched without the limit which has to watch that is, the broadcast of a co-channel in each television which in this case, is installed without the channel limit.

26 At this time, the tuner (10), the demultiplexer (20), and the decoder (30) and D/A converter (40) are in the reciprocity one by one correspondence relation. And especially, a plurality of tuners (10) is in the respective one by one correspondence relation with each Remocon signal receiver (201, 211, 221, .). Therefore, as to the controller (60), the tuner 3 thus performs the corresponding operation about the signal inputted through the Remocon signal receiver 1 (201) about the signal in which the tuner 2 is inputted about the signal in which the tuner 1 having in one by one correspondence relation is inputted through the Remocon signal receiver 2 (211) through moreover, the Remocon signal receiver 3 (221). And moreover, the controller (60) selectively the demultiplexer 1 the tuner 1 , and the demultiplexer 2 the tuner 2 and demultiplexer 3 output the broadcasting program demodulated and outputs from the tuner 3.

27 This the multi set top box (100) according to the present invention constructed as described above is installed at the living

room, and as to as to the user, positioned in the living room in the state that the living room, the inner room, and the studying room is equipped with the television and assumed the user, who is the channel 11 positioned in the inner room through equipped remote controller (remocon, and the drawing non illustration) the user who is the channel 31 positioned in and, the studying room through the equipped remote controller requests selectively the channel 09 burn through the remote controller are as follows.

28 Firstly, according to the channel selection through the remote controller of each user, each Remocon signal receiver (201, 211, 221, .) receives the corresponding remocon signal and it transmits this through the target input port of the signal-connected collector (70). It encodes the information for the target input port and the received remocon signal and the remocon signal the receiving face collector (70) transmits this with the controller (60) through the input port ((1), (2), and (3)) in this way.

29 Accordingly, the controller (60) decodes the inputted and encoded information and it performs the corresponding control action from this. That is, the controller (60) the remocon signal received from the decoded information as described above through the input port (1) of the collector (70), and the remocon signal received through that is, the Remocon signal receiver 1 (201) is the input port (2) of the collector (70) the channel 11, that is, the Remocon signal receiver 2 (211) the remocon signal which is the channel 31 received through and, the input port (3) of the collector (70), that is, the Remocon signal receiver 3 (221) recognizes clearly to request the channel 09 burn.

30 Therefore, as to the controller (60), the tuner 1 which is in the Remocon signal receiver 1 (201) and one by one correspondence relation the tuner 2 which is in the Remocon signal receiver 2 (211) and one by one correspondence relation the tuner 3 which is in and, the Remocon signal receiver 3 (221) and one by one correspondence relation demodulates the broadcasting program of the channel 09 burn the channel 31 and outputs the channel 11. It selects respective broadcasting program demodulated and outputs from the tuner (10) which is in one by one correspondence relation and moreover, a plurality of demultiplexers (20) outputs.

31 A plurality of decoders (30) decode broadcast data which are selectively outputted from the demultiplexer (20) which is in one by one correspondence relation and it restores and outputs to the original video and audio data. Video and audio data restored and outputted in this way are converted and outputted from the corresponding D/A converter (40) to the analog broadcasting signal. It is outputted through the corresponding output port of the connector (50) to the signal-connected television. In that way it watches the broadcasting program of the channel selected out for a user.

32 In this way, in order that the other broadcast channel is watched through the television 3 (220) installed at the user who if the watching TV halfway user requests the bearer channel modification, is located in for example, the studying room. Is the studying room, if the broadcast channel (for example, the channel 11) is selected through the remote controller, the collector (70) receives the remocon signal through the target input port (3) from the Remocon signal receiver 3 (221) and the information for the target input port (3) and the received remocon signal is encoded and this is transmitted with the controller (60).

33 Accordingly, in order to control the tuner 3 which is in the Remocon signal receiver 3 (221) and one by one correspondence relation among a plurality of tuners (10) and it demodulates and outputs the broadcasting program of the channel 11 it controls. In that way as described above, broadcast data demodulated and outputs as described above watch the broadcasting program of the channel (channel 11) which the controller (60) selects through television 3 (220) installed at a user is the studying room it is transmitted to the thus signal-connected television 3 (220) through the corresponding output port (3) of the connector (50) it is signal-processed through the corresponding demultiplexer (20), corresponded with one to one the decoder (30), and the D/A converter (40).

34 In the embodiment described in the above, the tuner (10), demultiplexer (20), decoder (30), the D/A converter (40) etc can be a plurality of each configurations (Component) the embodiment described in the above. But it can be the single structure which is highly integrated.

35 Moreover, for example, the collector (70) receives the remocon signal at the place where the television is instead of installed

in the other many method with the collector (70) of one configuration for connecting a plurality of remocon signal receivers (201, 211, 221, .).

36 In the above, the above-described preferred embodiment of the present invention is disclosed for the object of example. An etc. of the part will be various another preferred embodiment possible in the technical mapping of the present invention and the technical scope disclosed in the patent claim which hereinafter is attached the person skilled in the art in the world.

▸ Effects of the Invention

37 As to the multi set top box according to the present invention constructed as described above, a plurality of televisions signal-connected in the multi set top box (settop box) and the Remocon signal receiver corresponded with one to one are equipped in each television Ga Kkal. It is the very convenient invention which quite freely selects the broadcast channel which is not restricted by the place where the settop box is installed to a user and desires in the place where the television is installed and watched.

Scope of Claims

Claim[1] :

38 The multi set top box which decodes outputted an plurality of broadcast datas as to the digital broadcast receiver (Set Top Box) from the demodulation method: demodulation method demodulating and outputs the broadcasting program of the selected multi-channel and it is signal-connected with a plurality of display devices through the decoding means: a plurality of output ports restoring and outputs to the original video and audio data; and is comprised of the control means controlling an operation including the demodulation method etc. from a plurality of external remote control signal receiving meanses which is corresponded with one to one and transmits each broadcast data restored and outputted as described above to the signal-connected corresponding display device through the output port is equipped according to the transmitted remocon signal.

Claim[2] :

43 The multi set top box of claim 1, wherein it is signal-connected with a plurality of remocon signal receiving meanses through a plurality of input ports; and the signal collection means encoding the information for the corresponding port and the remocon signal transmitted through the input port from the remocon signal receiving means and provides this for the control means is more included and it is comprised.

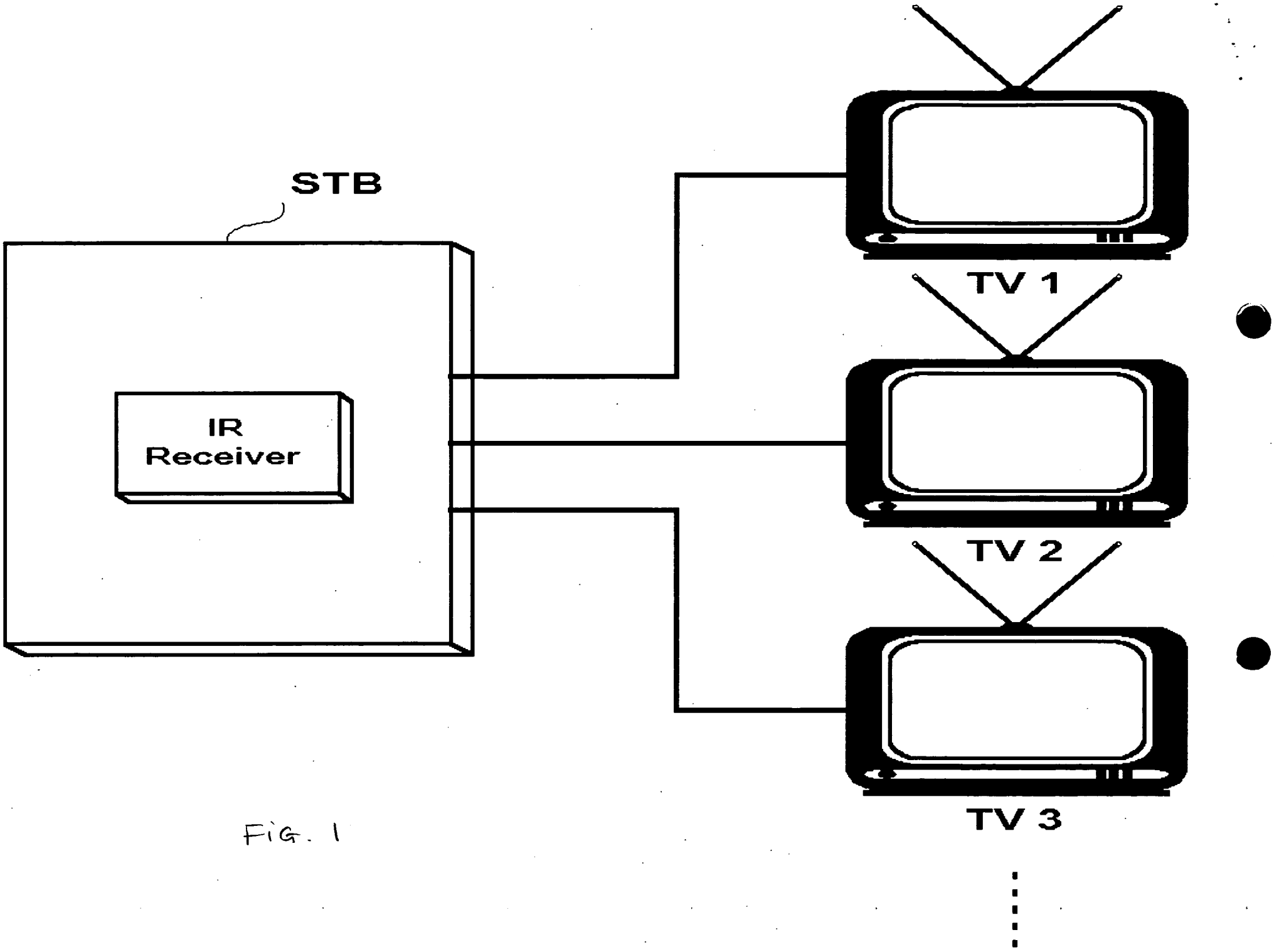


FIG. 1

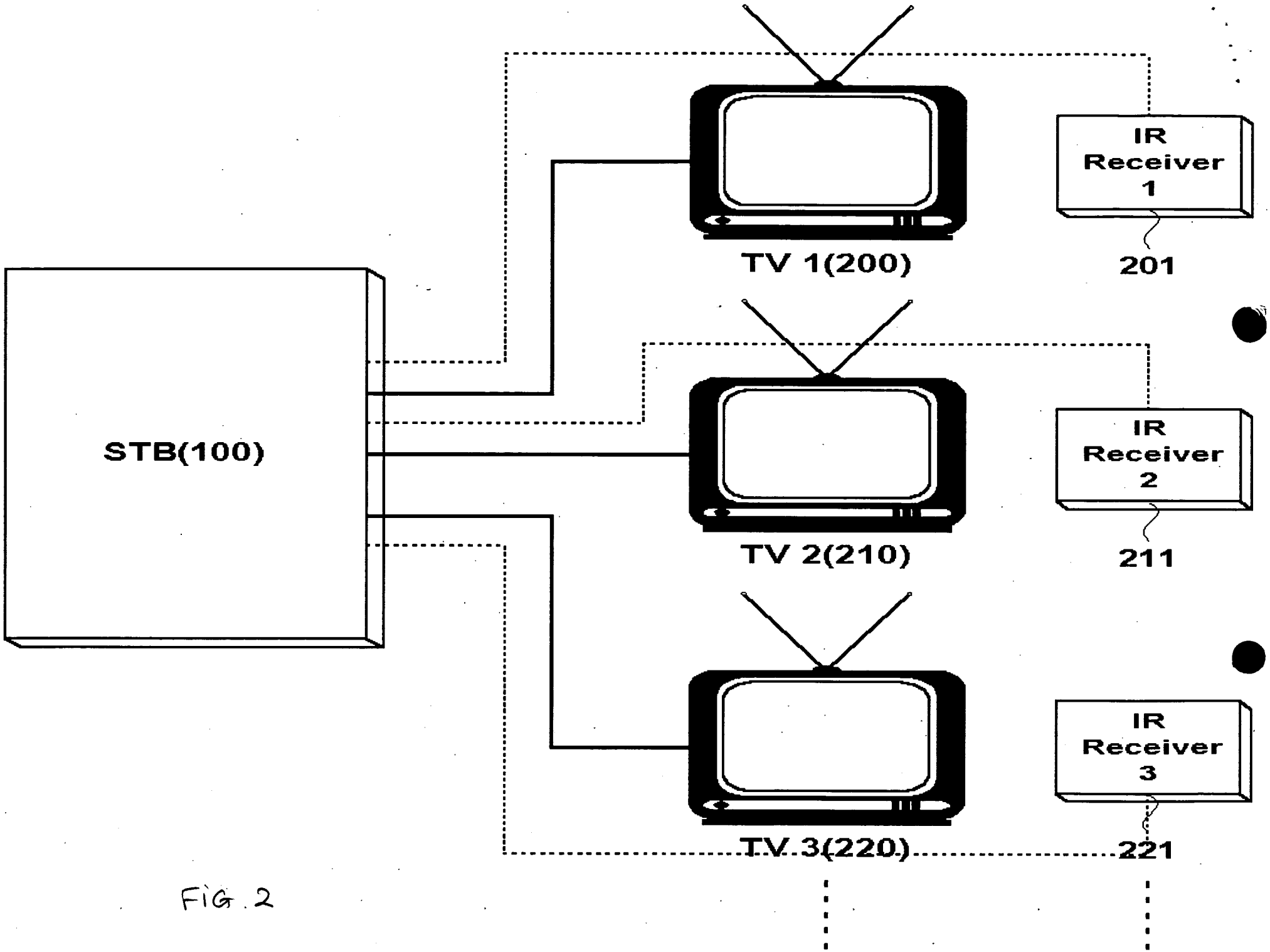

STB(100)
TV 1(200)
TV 2(210)
TV 3(220)
IR Receiver 1
IR Receiver 2
IR Receiver 3
201
211
221

FIG. 2

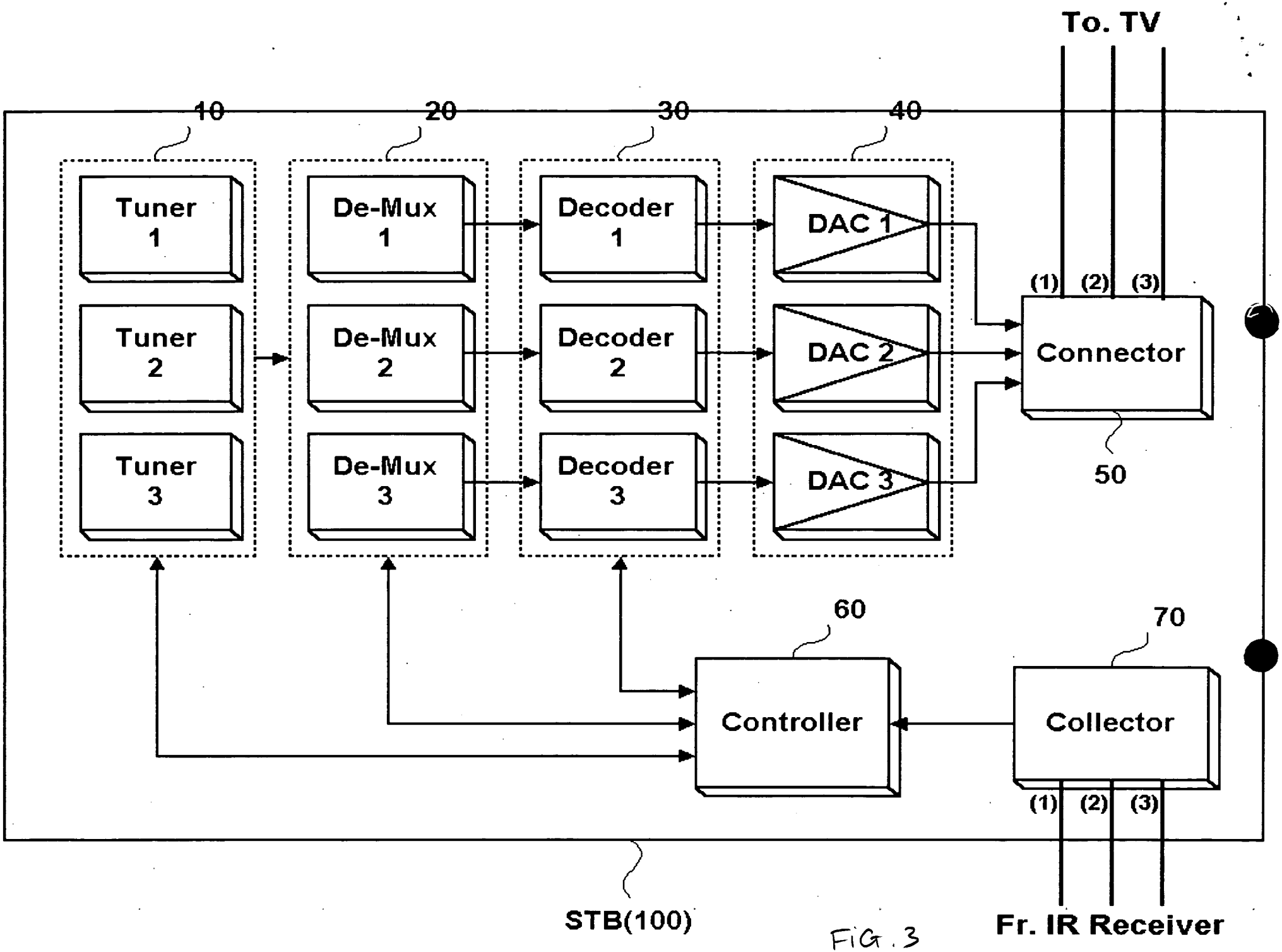

To. TV
10
20
30
40
Tuner 1
Tuner 2
Tuner 3
De-Mux 1
De-Mux 2
De-Mux 3
Decoder 1
Decoder 2
Decoder 3
DAC 1
DAC 2
DAC 3
(1)
(2)
(3)
Connector
50
60
Controller
70
Collector
(1)
(2)
(3)
STB(100)
Fr. IR Receiver

FIG. 3